

## **Arkema Facility - Harvey Response**

Crosby, TX

Arkema Inc.

September 5, 2017

Project #109489 Summary

## 1.0 Introduction

As a result of flooding events related to Hurricane Harvey, the Arkema facility located in Crosby, TX suffered a loss of power and failure on refrigeration of manufacturing process. The loss of temperature control resulted in degradation and heating of organic peroxides, with the potential of creating a fire. As a precautionary measure, local authorities established a 1.5-mile radius evacuation zone around the facility.

On August 31, 2017, the Center for Toxicology and Environmental Health, LLC (CTEH®) was contacted by Arkema Inc. (Arkema) to initiate air monitoring and sampling around the community areas outside of the evacuation zone perimeter. This submittal summarizes the results of real-time air monitoring conducted by CTEH® personnel from 06:00 on September 3, 2017 to 06:00 on September 4, 2017. A map of the site location is provided in **Attachment A**.

## 2.0 Real-time Air Monitoring

All real-time air monitoring instrumentation was calibrated per the manufacturer's recommendations prior to air monitoring. Handheld, real-time air monitoring was conducted for benzene, carbon monoxide, oxygen (O<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and volatile organic compounds (VOCs) using RAE Systems UltraRAE and MultiRAE instruments. Additionally, particulate matter (PM<sub>2.5</sub>) was assessed using DustTraks, and AM510s. **Table 1** summarizes the data for all real-time air monitoring readings recorded in the Crosby, TX Community from 06:00 on September 3, 2017 through 06:00 on September 4, 2017 and **Table 2** summarizes the Worker Activity real-time air monitoring readings from within the site boundary for the same period. Maps of real-time air monitoring locations are provided as **Attachment B**.

**Table 1 Community Real-time Handheld Air Monitoring Readings**  
**06:00 September 4, 2017 – 06:00 September 5, 2017**

Analyte	Instrument	Number of Readings	Number of Detections	Range of Detections*
Benzene	UltraRAE	1	0	< 0.025 ppm
CO	MultiRAE	5	0	< 1.0 ppm
PM <sub>2.5</sub>	AM510	151	151	0.012 - 0.408 mg/m <sup>3</sup>
	Dusttrak	26	26	0.023 - 0.047 mg/m <sup>3</sup>
SO <sub>2</sub>	MultiRAE	7	0	< 0.1 ppm
VOCs	MultiRAE	173	0	< 0.1 ppm

\*If detections were not observed, the instrument detection limit is listed in this column.

**Table 2 Worker Activity Real-time Handheld Air Monitoring Readings**  
**06:00 September 4, 2017 – 06:00 September 5, 2017**

Analyte	Instrument	Number of Readings	Number of Detections	Range of Detections*
O <sub>2</sub>	MultiRAE	1	1	20.9 %
VOCs	MultiRAE	13	4	0.7 - 2.4 ppm

\*If detections were not observed, the instrument detection limit is listed in this column.

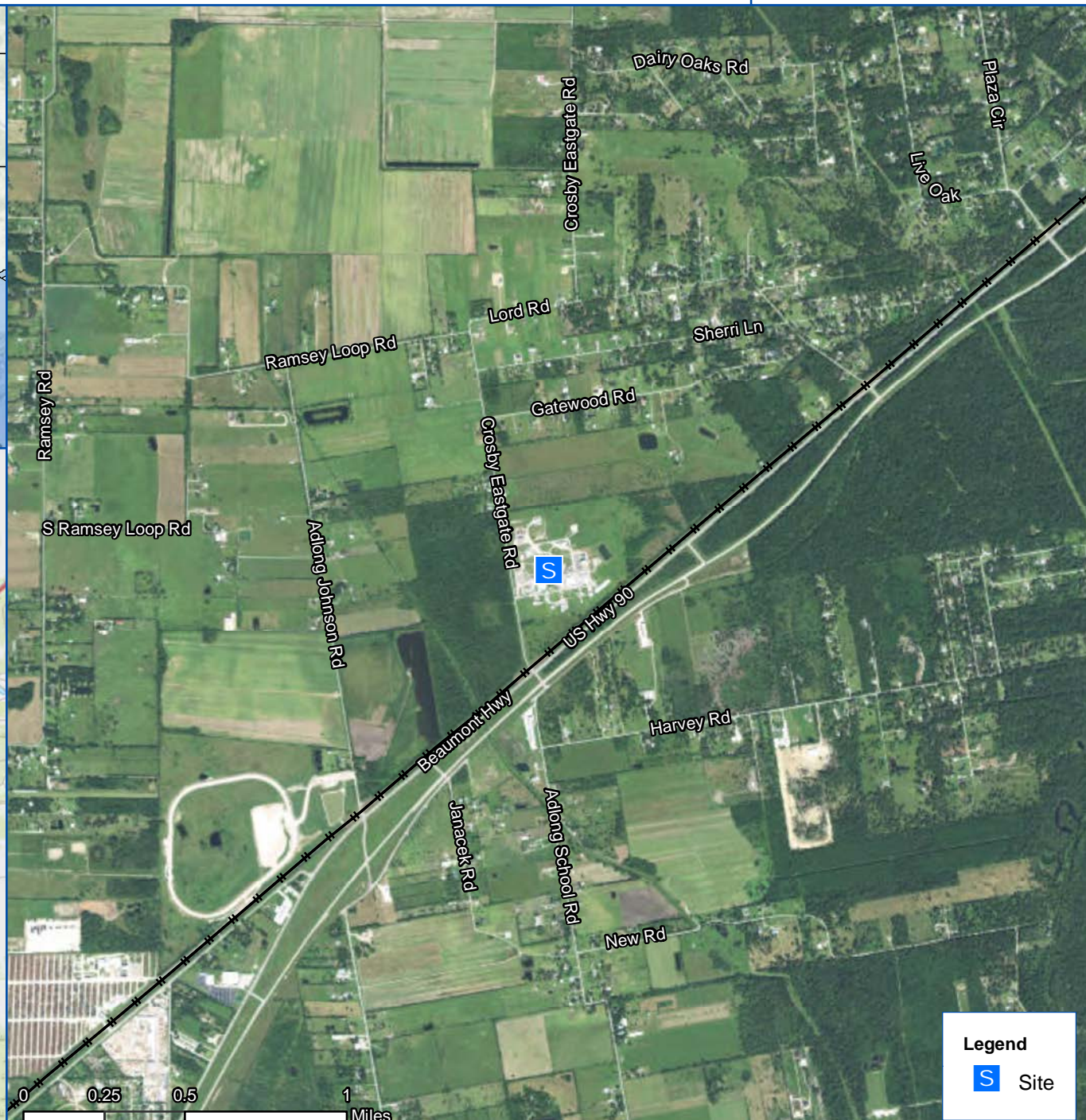
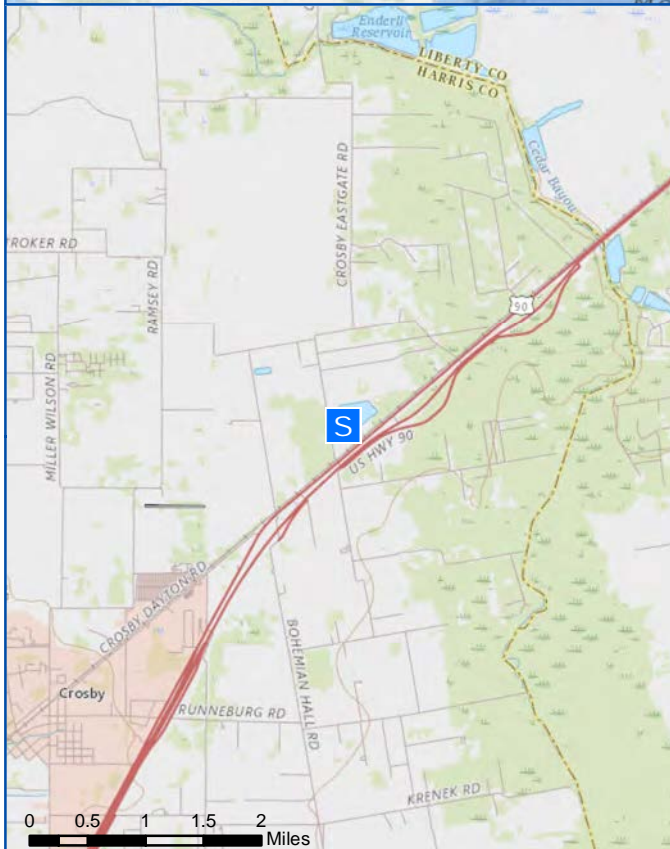
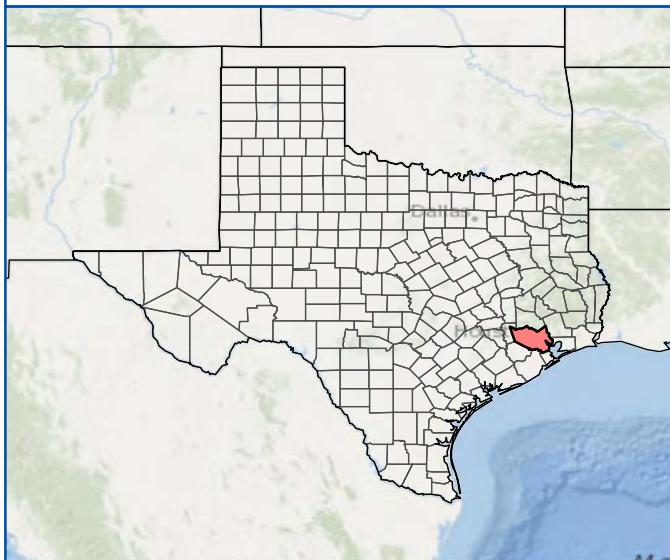
### 3.0 Analytical Air Sampling

To supplement real-time air monitoring, CTEH® deployed areas along the perimeter of the evacuated area within the community. Evacuated canister (Minican™) samplers were regulated to collect air evenly over a 24-hr period. Analytical air samples will be submitted to SGS Galson Laboratories, an AIHA-accredited laboratory, for analysis using EPA Method TO-15. A map highlighting the analytical air sampling locations is provided as **Attachment C**. Analytical Air Sampling Results will be reported upon receipt from the laboratory.

# **Attachment A**

## **Site Location Map**



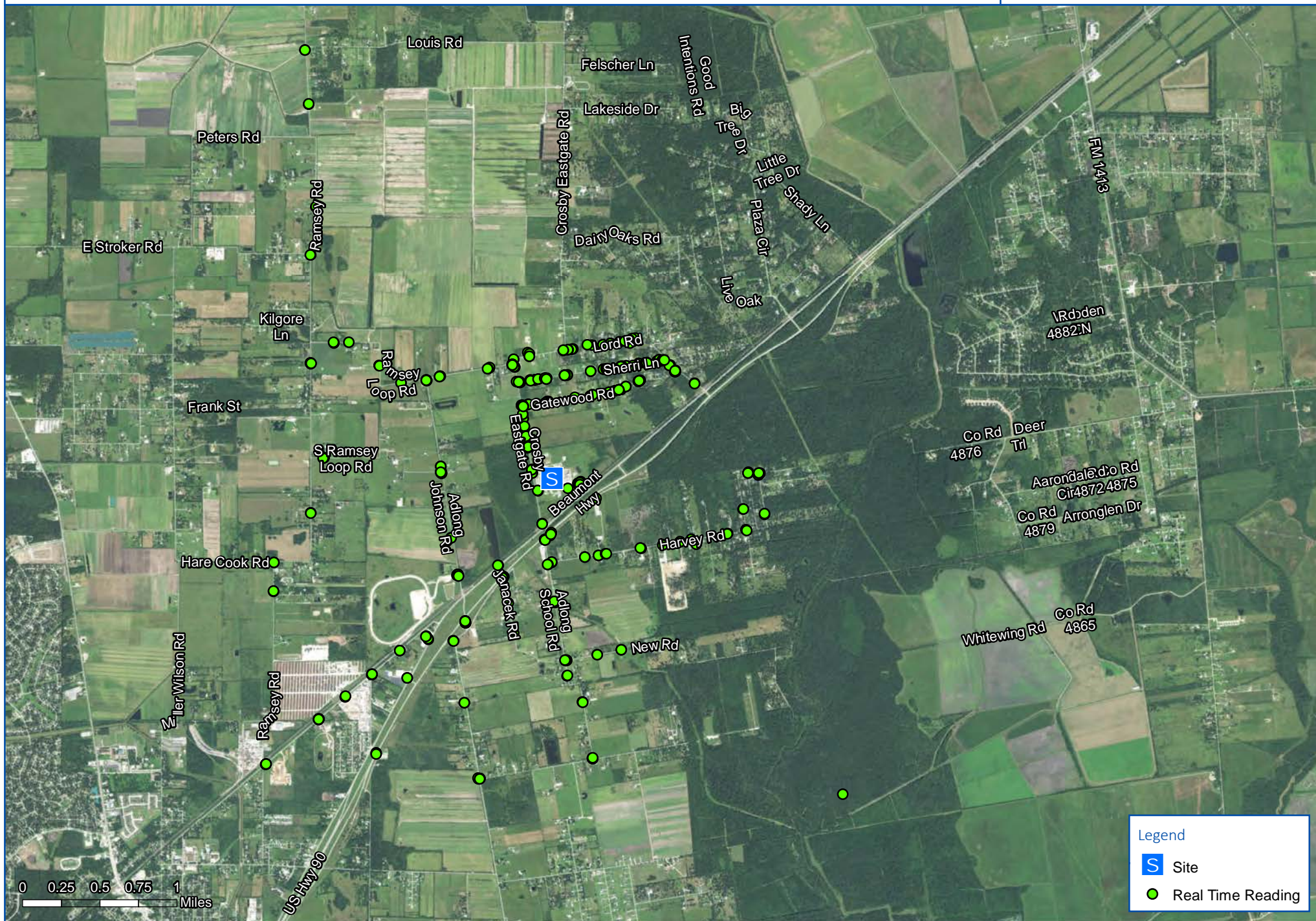


**Legend**  
S Site

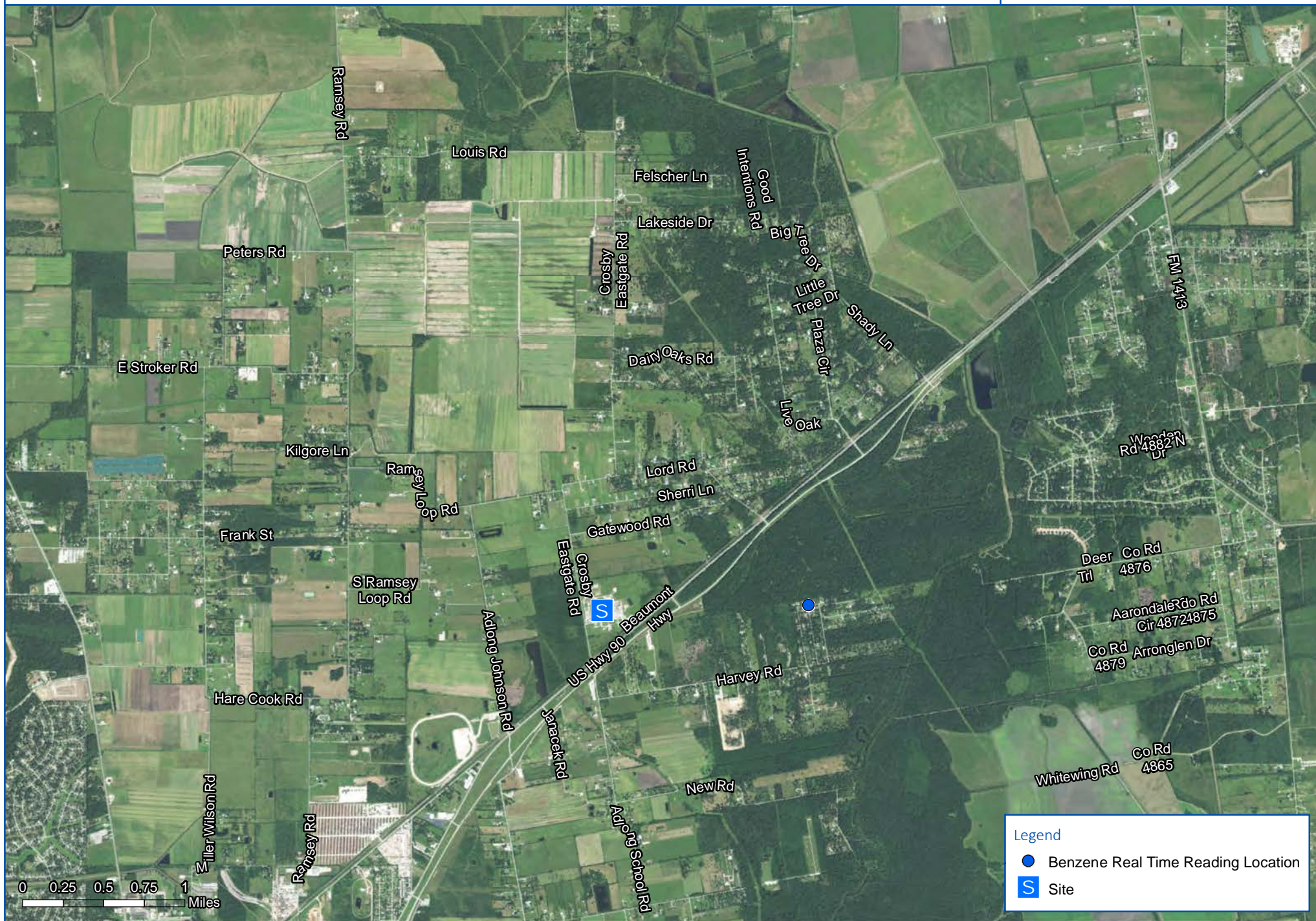
# **Attachment B**

## **Handheld Real-time Air Monitoring Locations**





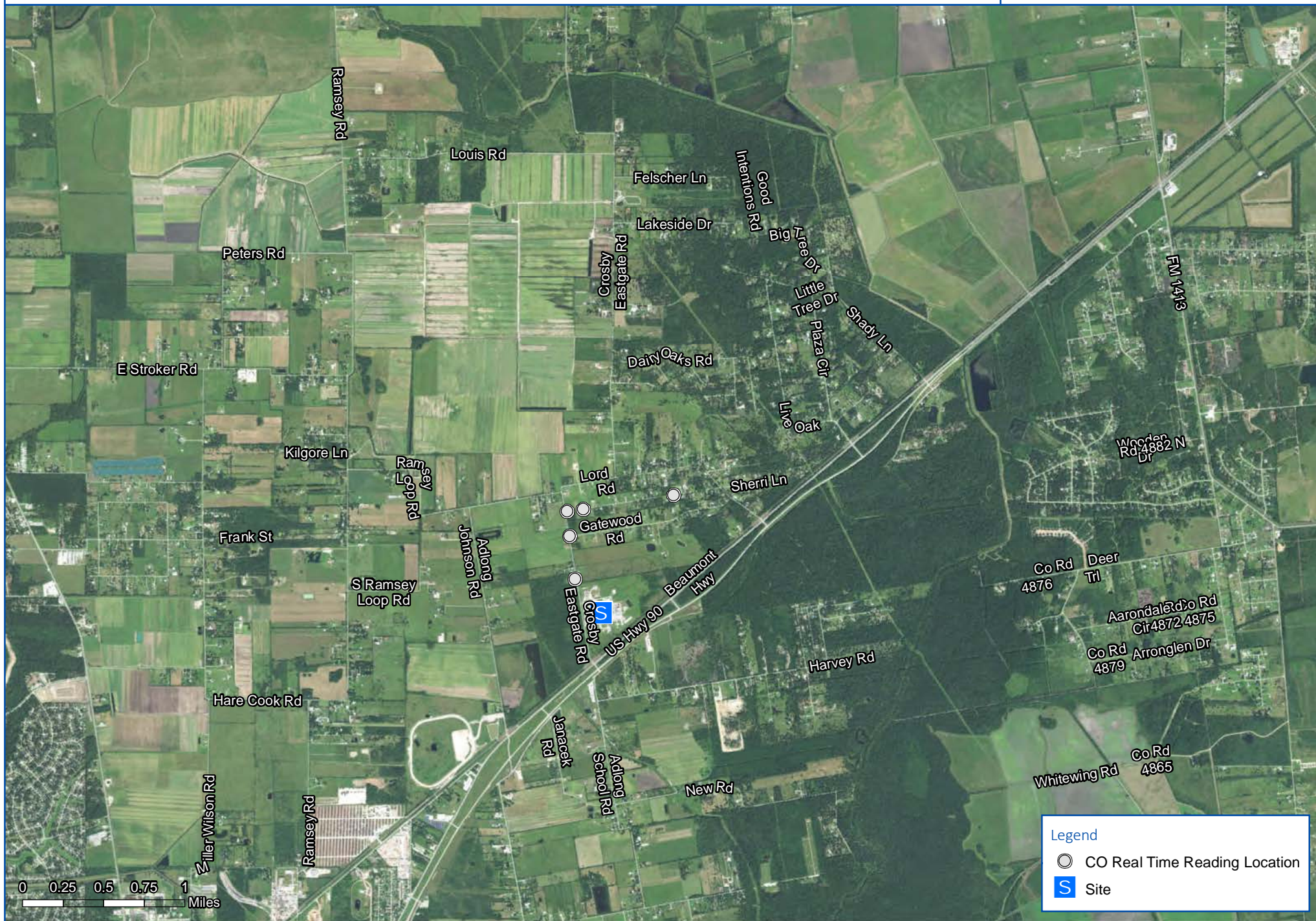




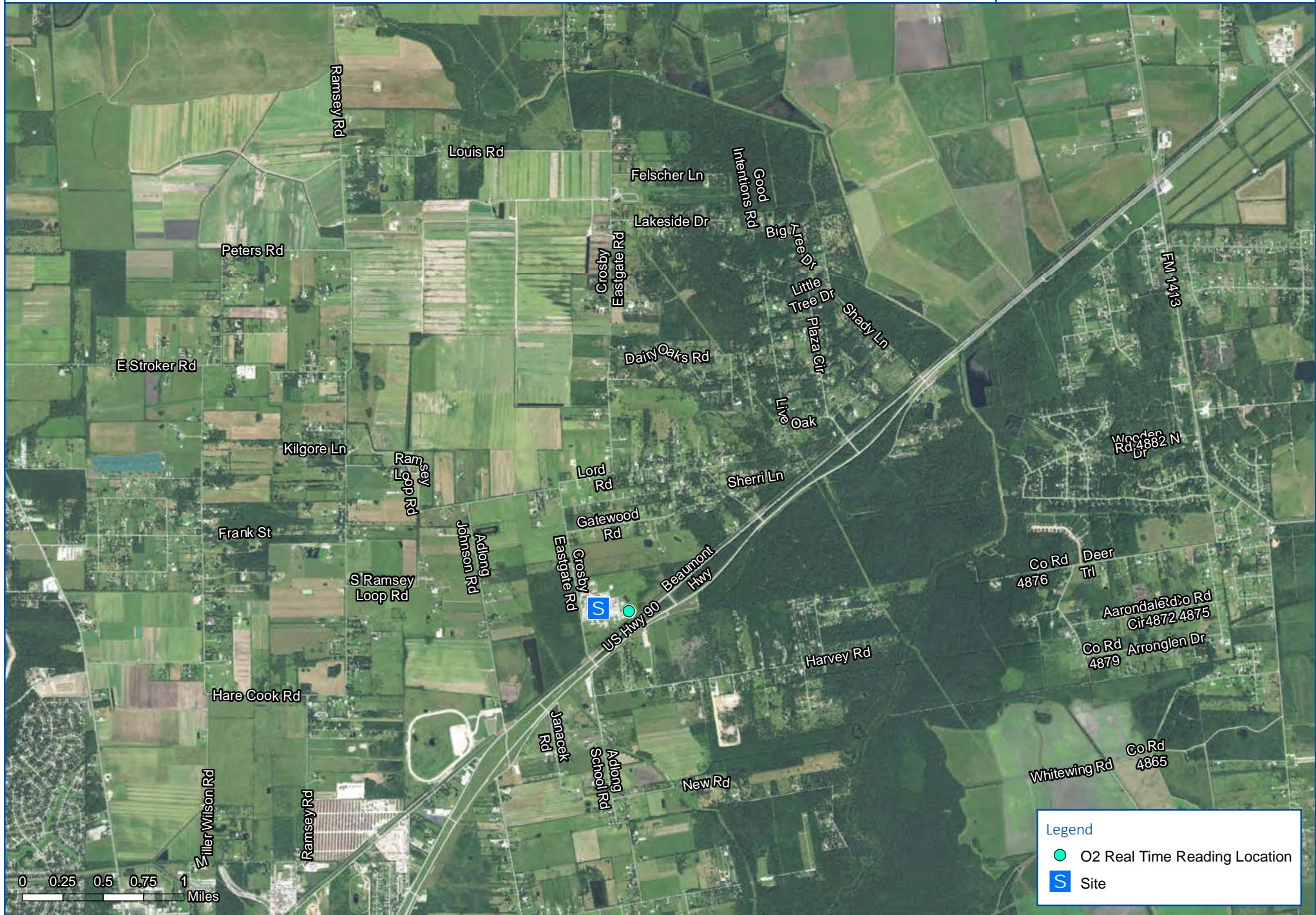
**Legend**

- Benzene Real Time Reading Location
- Site

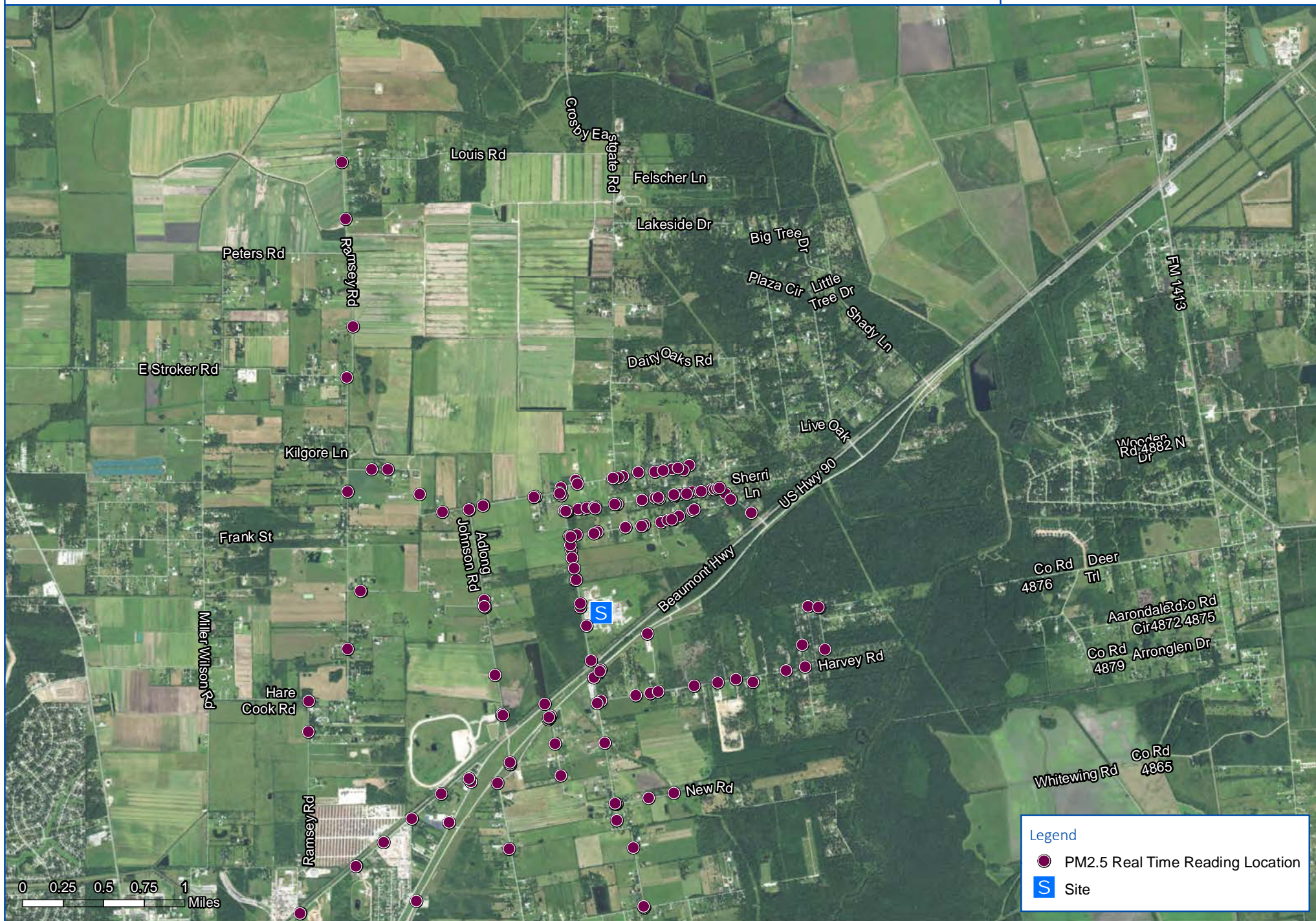




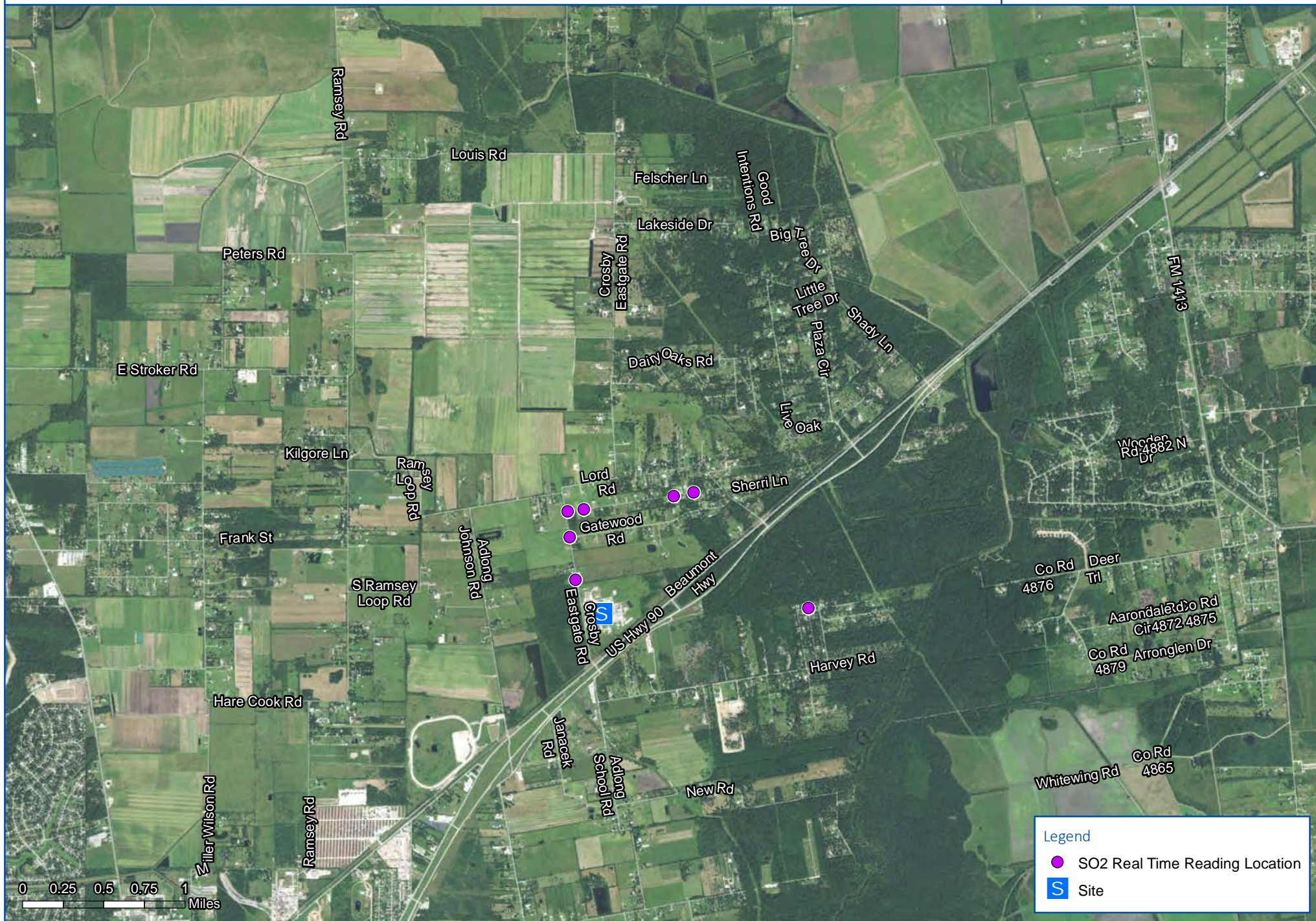










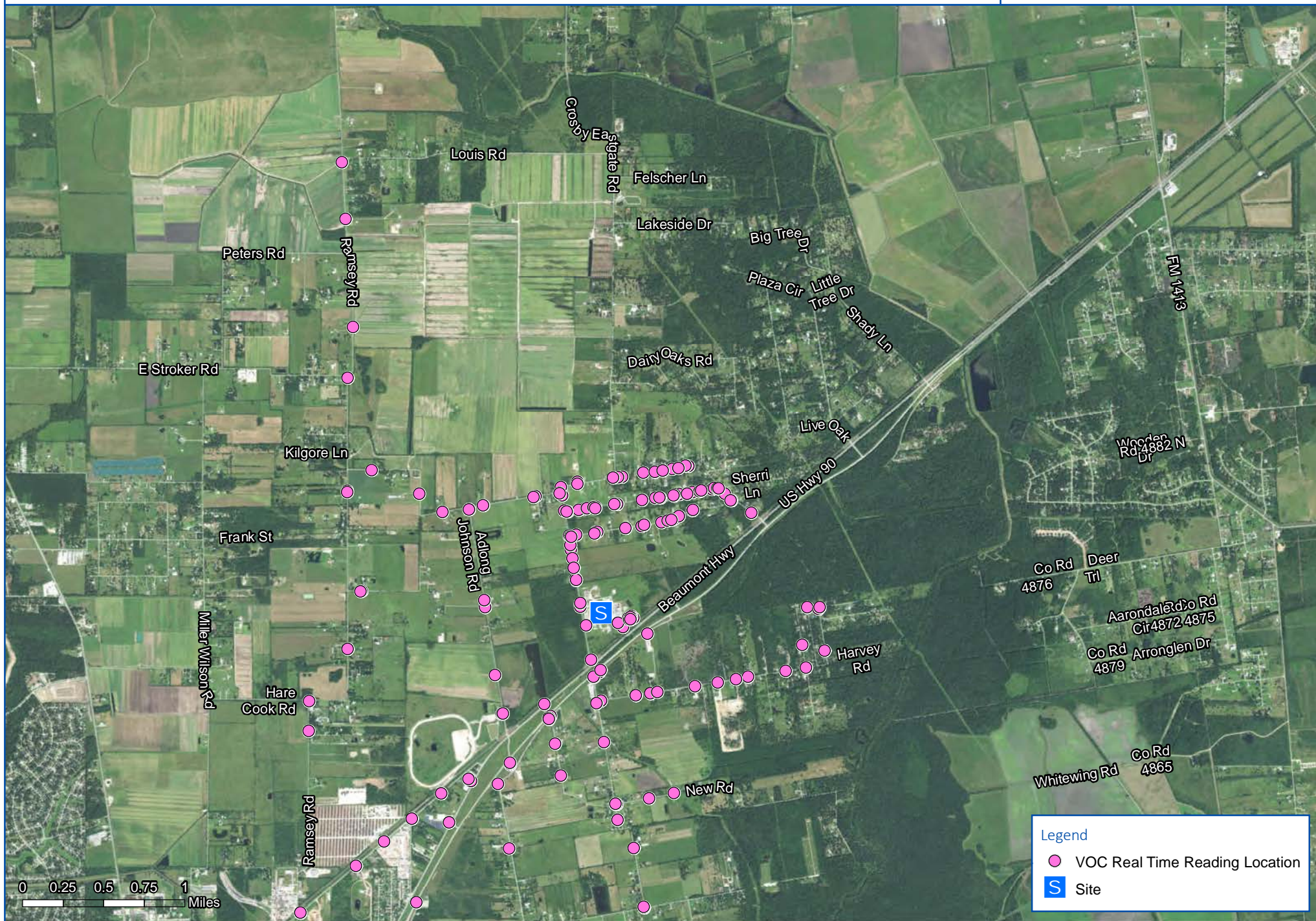


## Legend

● SO2 Real Time Reading Location

■ Site

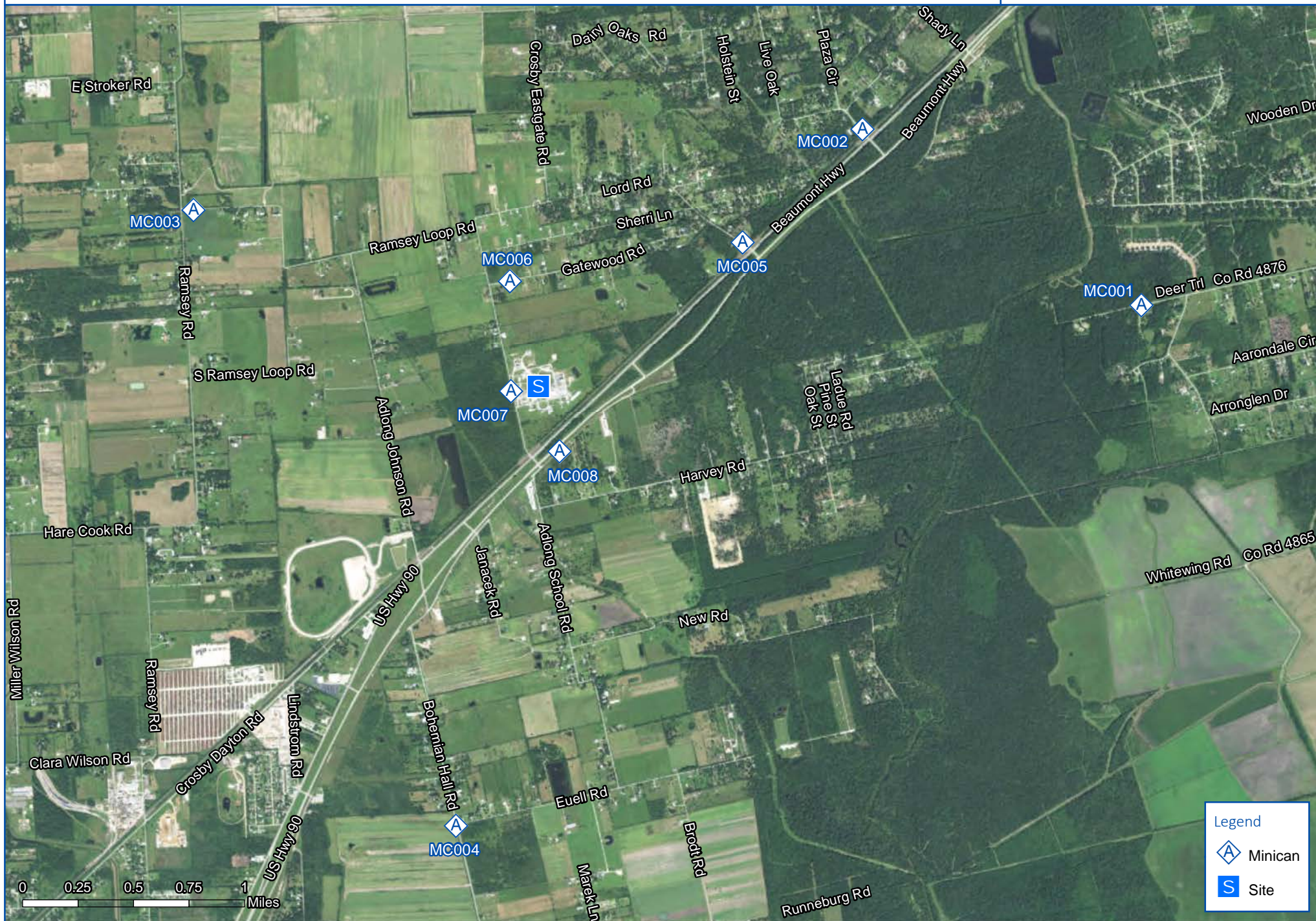




# **Attachment C**

## **Map of Analytical Air Sampling Locations**





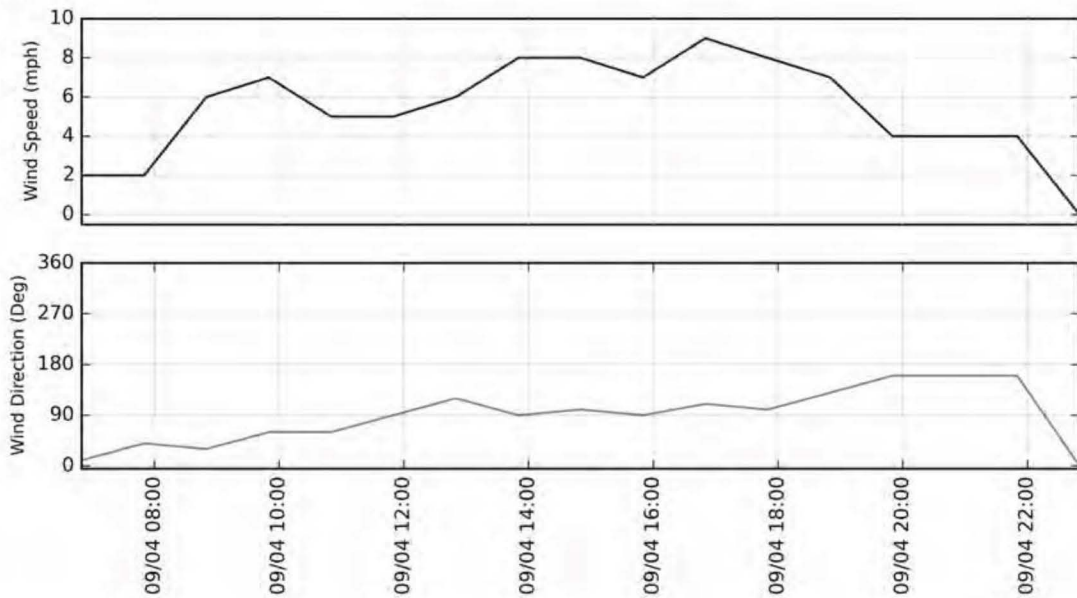
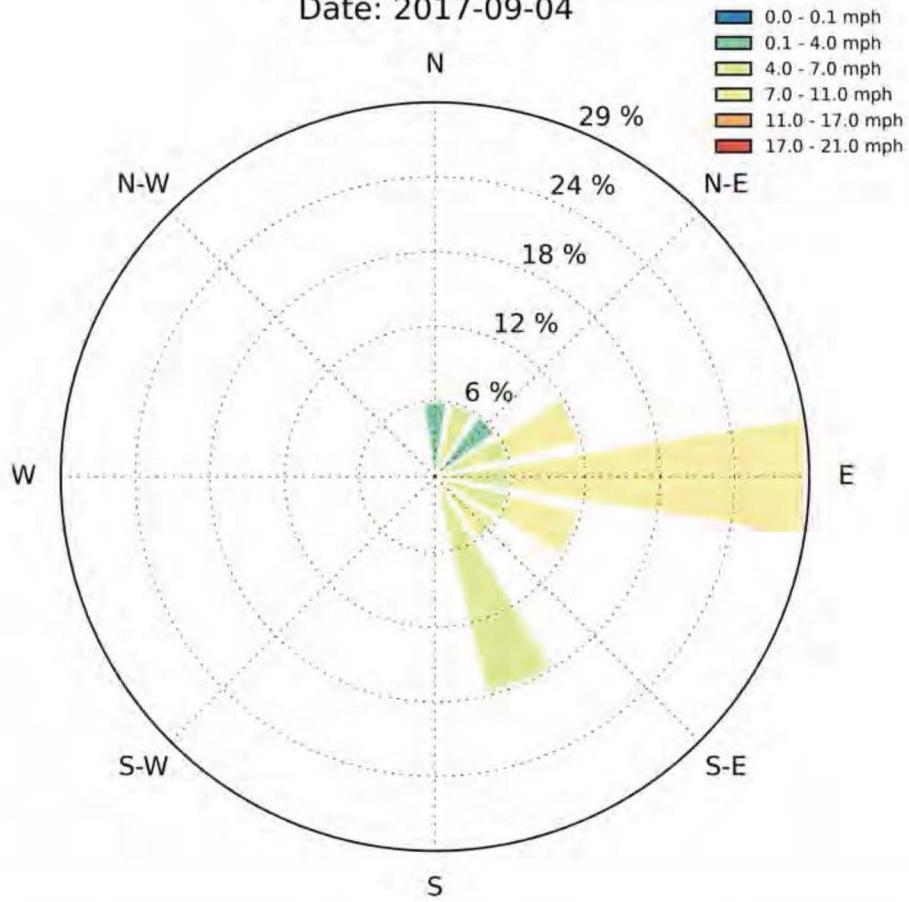
# **Attachment D**

## **KHPY Windrose**

**(Highland Park Airport - 12.5 miles SSE of Site)**



Weather Station: KHPY  
Date: 2017-09-04



Weather Station: KHPY  
Date: 2017-09-05

